

REMARKS

Claims 1-24 remain pending in the application. Claim 1 has been amended. Claim 2 has been cancelled.

Claims 1-24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sywik et al. (U.S.P. 6,262,912) (Sywik). Applicants have now amended claim 1 by incorporating therein the limitations recited in claim 2. Applicants submit that Claim 2 teaches a circuit associated with each sense amplifier and write data driver for holding data sensed by the sense amplifier and available to the write driver. Applicants submit that this teaching is novel and is not taught nor suggested by Sywyk. Accordingly, Applicants traverse the statement made by the Examiner in the Office Action (1st paragraph, page 2) for the following reasons:

1) If, *arguendo*, Sywik would have taught the circuit taught by Applicants in claim 2, such a circuit would have to have been placed between elements 652 and 654 in Sywyk's Figure 6. Yet, Sywik never suggested that such a circuit be incorporated in his memory array.

2) Sywyk describes no direct communication between the referenced blocks (i.e., 652 and 654), nor does he describe any storage element associated thereof. More particularly, Sywyk's Figure 6 shows these blocks pitted against one another, and neither the text cited by the Office Action (i.e., column 3, lines 50+) nor the Figure describe communication between them. In contrast to Applicants, Sywyk teaches that the data must flow from the read sense amplifier all the way to the I/O pad before it can find its way back to the write patch, as it is explained by Sywik in col. 3, lines 50+.

Regarding claim 3, Sywik et al. makes no mention nor does he suggest the presence of a circuit that provides the function that the Applicants teach in Claim 3, namely, combining read-out data with input data to calculate the write data. Indeed, if this would not have been the case,

this function would have needed to be placed somewhere outside of the circuits described by Figure 6 and 7 of Sywyk's patent.

A similar statement can be made with regards to Applicant's claims 6-8 which are unique and not taught by Sywyk.

In summary, Sysyk patent does not teach issues related to 'destructive write' memory cells at all. The static cells recited by Sywyk in his patent are not destructive write cells. Static RAM cells all have the characteristic that a write wordline can be raised without modifying the information stored in the cell. In contrast, Applicants teach the unique challenges of a destructive write memory cell. Whereas such a cell is not novel, the present application teaches a novel ways of reducing the cycle time in memories using such a cell.

Claim 10 as recited teaches means for refreshing dynamic cells and are, therefore, not applicable to Sywyk's static RAM cells where refresh cycles are not warranted altogether.

Regarding Claims 11-13, Applicants describe a novel technique for activating the READ and WRITE wordlines in an array of cells that have separate READ and WRITE ports. In the prior art, for dual port memories, a separate decoder and driver need to be provided for each port. These duplicated elements are referenced by block 600 in Figure 6 of Sywyk's patent. In the present application, Applicants teach the use of a single decoder, and a single set of wordline (WL) drivers. The decoder is operated only once per cycle, but its results are 'latched' into the WL driver to enable overlapping operation of a READ wordline and a WRITE wordline. Thus, this key feature is neither taught nor described by Sywyk.

Claim 16 teaches a specific means for delivering sensed data to write drivers and is not taught by Sywik. Similarly, Claims 18 and 19 teach the breadth of Applicants' invention

Claim 20 teaches a pipelined write operation directly followed by a read operation. A specific technique for providing coherent and accurate results is described in claim 20. Sywik does address this in a simplistic configuration (applicable only to a simplex cell) where a read

and a write to the same address are activated simultaneously. However the Sywyk patent states (col. 9, line 15-20) "These two situations, however, may be taken care of in a number of ways. One ways is to simply ignore the fact that the data may not be accurate. Another way is to resolve such contention with the supporting circuitry by not permitting simultaneous access under these conditions". Thus, Sywik teaching differs from Applicants' in that Sywik fails to insure data accuracy, and that the array be permitted to operate under any combination of simplex read and write commands.

Thus, Applicants submit that the amended claim 1 and all claims dependent thereof are patentably distinct from Sywik et al., and respectfully request that the Examiner reconsider and withdraw the rejection of the stated claims based on 35 U.S.C. 102(b)

Claims 13, 17, and 23 stand rejected under 35 U.S.C. § 103(a) as being anpatentable in view of Sywik et al. (U.S.P. 6,262,912) (Sywik).

Applicants have now amended claim 1 to incorporate therein the limitations recited in claim 2. Claims 13, 17 and 23 are dependent from amended claim 1. Thus, since Sywik doe not teach nor does he describe nor suggest a circuit associated with each sense amplifier and write data driver for holding data sensed by the sense amplifier and available to the write driver, it follows that claims 13, 17 and 23 are patentable over Sywyk.


Thus, Applicants submit that in view of amendment introduced in claim 1, they have overcome the rejection of the aforementioned claims, and respectfully request that the Examiner reconsider and withdraw the rejection of the stated claims under 35 U.S.C. 103(a).

Accordingly, Applicants believe that all the active claims are now in condition for allowance, and respectfully request that the Examiner enter the amended claims; that all the rejections and objections to this application be reconsidered and withdrawn; and that the Examiner pass all the pending claims to issue.

Should the Examiner have any suggestions pertinent to the present application, the Examiner is encouraged to contact Applicants' undersigned representative at the number shown below.

No fee is believed to be due for this submission. If any fees are required, however, the Commissioner is hereby authorized to charge such fees to Deposit Account No. 09-0458.

Respectfully submitted,
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